of sharpness, and singular beauty and delicacy of tint. From his further researches on this subject he deduces the following conclusions: first, that it is the heat of the rays, not their light, which operates the change; secondly, that this heat possesses a peculiar chemical quality, which is not possessed by the purely calorific rays outside of the visible spectrum, though far more intense; and thirdly, that the heat radiated from obscurely hot iron abounds especially in rays analogous to those of the region of the spectrum above described.

The author then describes the photographic properties he has discovered to belong to mercury, a metal which he finds to possess, in an eminent degree, direct photographic susceptibility.

2. "Observations de la variation de la déclinaison et intensité horizontale magnétiques observées à Milan pendant vingt-quatre heures consécutives, le 22 et 23 Juin, le 20 et 21 Juillet, le 26 et 27 d'Aout, le 21 et 22 Septembre, et le 19 et 20 Octobre, 1842," rapportées par Robert Strambrecchi, premier élève adjoint.

A letter was also read from Sir John F. W. Herschel on the subject of Photography, addressed to S. Hunter Christie, Esq., Sec. R.S.

November 24, 1842.

FRANCIS BAILY, Esq., Vice-President, in the Chair.

The following papers were read, viz:—

1. "On certain improvements on Photographic Processes described in a former communication." By Sir John Frederick William Herschel, Bart, K.H., F.R.S., &c., in a letter to Samuel Hunter Christie, Esq., Sec. R.S. Communicated by Mr. Christie.

The present memoir, which is a sequel to the last by the same author, is accompanied by a series of photographic impressions illustrative of the chrysotype, cyanotype, and other processes formerly described by him. Some improvements which he has introduced into these processes are given, together with a few remarks on some other points treated of in the former paper, in relation to the influence of *thermic rays* as distinct from *calorific rays*; the former being rays, which in the spectrum accompany the red and orange rays, which are also copiously emitted by heated bodies short of redness, and which are distinguished from those of light by being invisible. The author thinks they may be regarded as bearing the same relation to the calorific spectrum which the photographic rays do to the luminous one, and would propose to designate them by the term *parathermic rays*. He conceives that these may be the rays which are active in producing those singular molecular affections determining the precipitation of vapours in the experiments of Messrs. Draper, Moser, and Hunt, and which will probably lead to important discoveries as to the intimate nature of those forces, resident on

the surfaces of bodies, to which M. Dutrochet has given the name of *epipolic forces*.

2. "Boring Register, Bow Island, South Pacific." By Captain Edward Belcher, R.N., communicated by Captain Beaufort, R.N., F.R.S.

The results of the boring operations carried on in this island are here given, as well as the register of the daily proceedings, under the particular superintendence of Mr. Thomas Pass, acting master of H.M.S. Sulphur. The depth reached was 45 feet, when the augur broke, and no further progress could be made.

November 30, 1842.

At the Anniversary Meeting,

The MARQUIS OF NORTHAMPTON, President, in the Chair.

John Thomas Graves, Esq., M.A., on the part of the Auditors of the Treasurer's Accounts, reported, that the total receipts during the last year, inclusive of a balance of 609*l.* 2*s.* 8*d.*, carried from the account of the preceding year, amounted to 3959*l.* 0*s.* 10*d.*; and that the total payments in the same period amounted to 2813*l.* 17*s.* 5*d.*, leaving a balance in the hands of the Treasurer of 1145*l.* 3*s.* 5*d.*

The thanks of the Meeting were given to the Auditors for the trouble they have taken in examining the Treasurer's accounts.

The thanks of the Meeting were voted to the Treasurer.

The Secretary read the following list of deceased Fellows of the Royal Society since the last Anniversary in 1841; of those ejected, and of Fellows admitted into the Royal Society since the last Anniversary.

List of Fellows of the Royal Society deceased since the last Anniversary (1841).

On the Home List.

Sir William Beatty, Knt., M.D.
Sir Charles Bell, K.H.
Thomas Blizard, Esq.
Lt.-Col. Sir Alex. Burnes, Knt.
Sir William Burroughs, Bart.
Richard Hart Davis, Esq.
Joseph Delafield, Esq.
John Dickenson, Esq.
The Right Hon. Sir William Garrow, Knt.
Lord Francis Gray.
Francis George Hare, Esq.
Henry Hennell, Esq.
Sir Henry Hugh Hoare, Bart.
James Ivory, Esq., K.H., M.A.
Joseph Jekyll, Esq. M.A.
Aylmer Bourke Lambert, Esq.
The Earl of Macclesfield.
The Earl of Munster.
The Duke of Norfolk.
John Gage Rokewode, Esq.
Samuel Seaward, Esq.
Henry Harper Spry, Esq.
Lord Vivian.
Lieut. J. R. Wellstead, I.N.
John Yelloly, M.D.